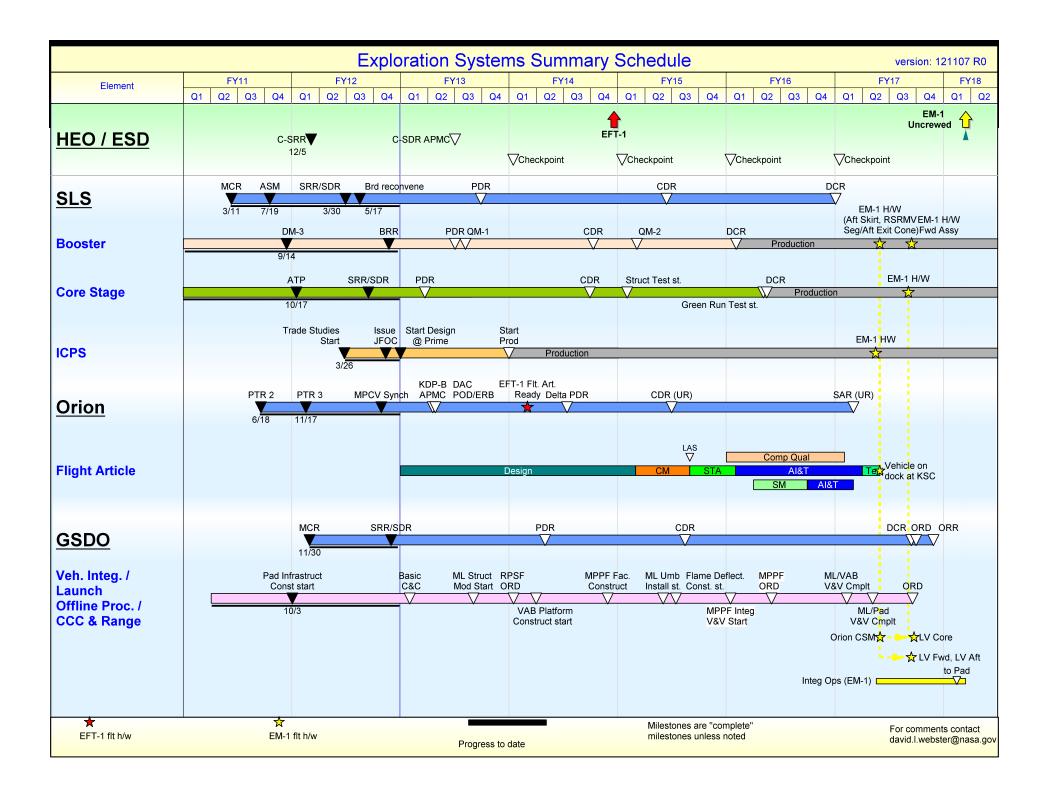
Topics

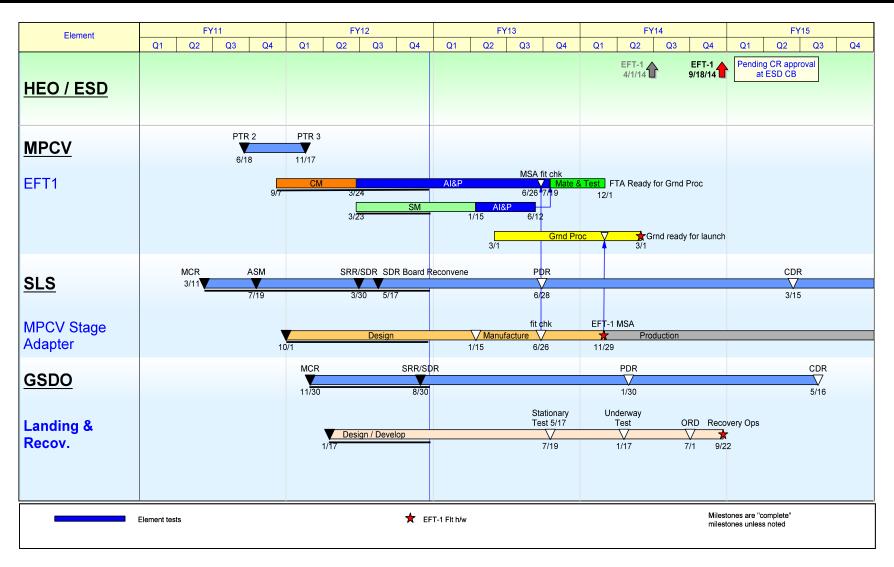


- Schedule and Milestone Overview
- Status
 - Orion
 - Space Launch Systems
 - Ground Systems Development and Operations



EFT-1 Integrated Schedule





Exploration Systems Development

Recent Accomplishments



August 2012				
1	Orion	0	EFT-1 Heat Shield Installation	
7-9	Orion	Т	Neutral Buoyancy Lab (NBL) Parachute (Main) Water Recovery Test	
8	SLS	Т	J-2X E10001 test A2J017	
8-10	ESD	R	C-MPSR/F2F	
14-24	Orion	Т	Boiler Plate Test Article (BTA) Vertical Drop Test at LaRC	
23	SLS	R	Booster BRR/Board	
28	Orion	Т	Main Parachute Test	
30	GSDO	R	System Requirements Review/System Definition Review (SRR/SDR) Board	

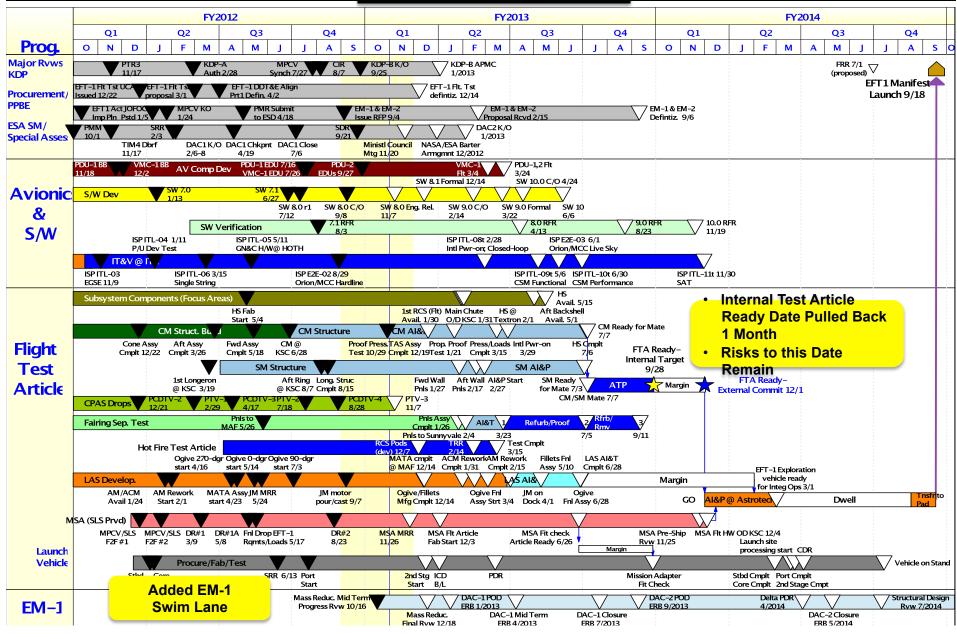
September 2012				
1	SLS	Р	Booster Negotiation Complete	
10	GSDO	Р	MPPF Contract Award	
25-28	Orion	R	KDP-B Kick-Off review	
28	GSDO	0	SRB Retrieval Ships Fully Transferred to T&R	

(P) Procurement Activity (R) Design Review or Programmatic Activity (T) Program or Element Test (H) HW Handoff (O) Other



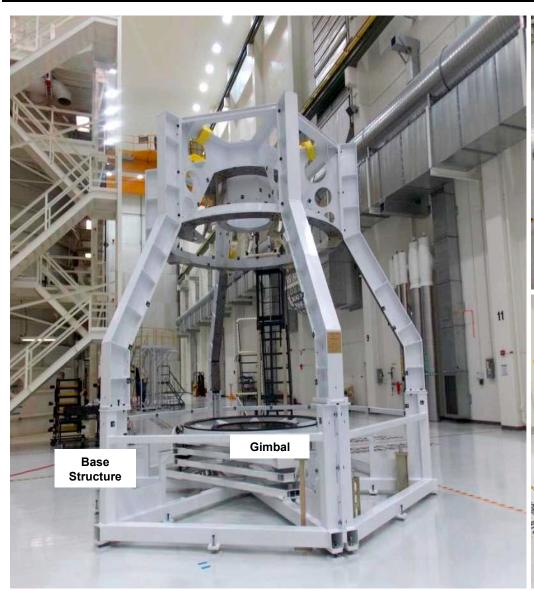
MPCV Summary Master Schedule

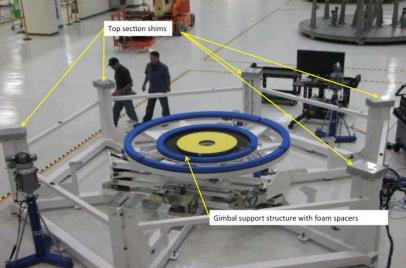




Ready for Proof Pressure Test Birdcage Tool Delivery



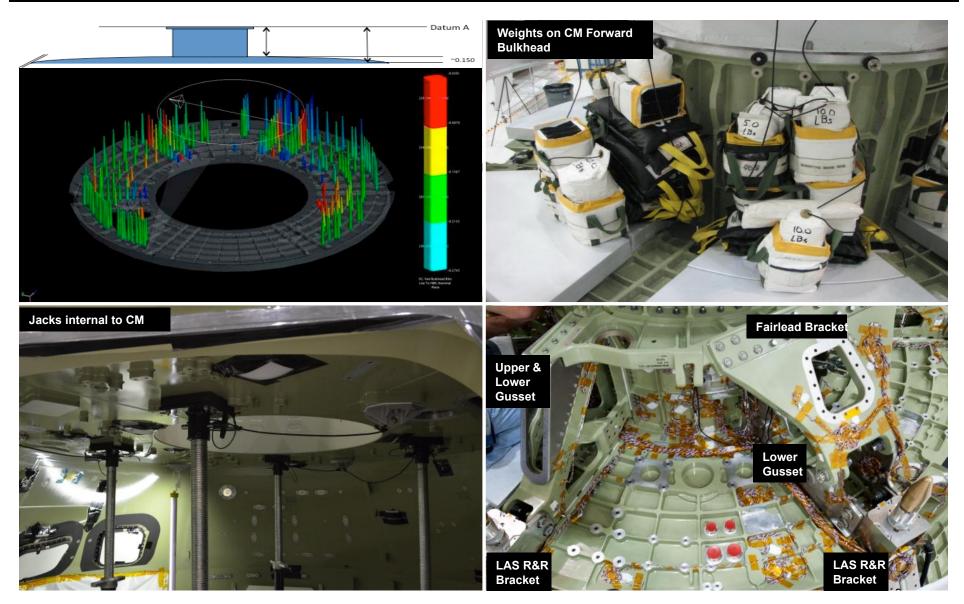






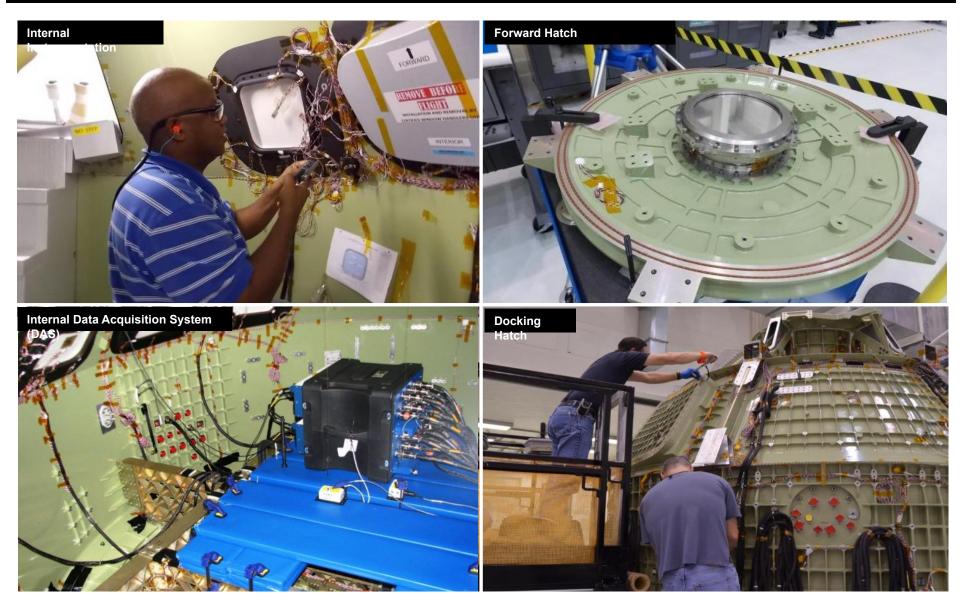
CM Ready for Proof Pressure Test Forward Bulkhead Outfitting





CM Ready for Proof Pressure Test Harness, Instrumentation and Hatch Installation





CM Ready for Proof Pressure Test Complete! CM in the Proof Test Cell





Heatshield Available Avcoat Application Plan and Schedule Status



- Avcoat Application at Textron
 - Honeycomb structure bonded to carrier
 - 300,000 cells individually filled with Avcoat
 - Priming and curing all time constrained
- Manufacturing Readiness and Schedule Review completed Oct 15-17
- MDU fit check and manufacturing lessons evaluated & statused:
 - X-Ray System to detect flaws
 - Machining Robot to achieve surface prep finish
 - Honeycomb Core cleaning & priming
 - Core bonding & edge closeout



Mate (Service Module Assembly) SM Structure Framework Assembly Status



2 of 3 Checkpoints Complete

- Structural Frame Complete
- Forward Ring Complete
- Outboard Ring In Work
 - Forward Outboard Ring Out of Spec Condition Repaired at KSC



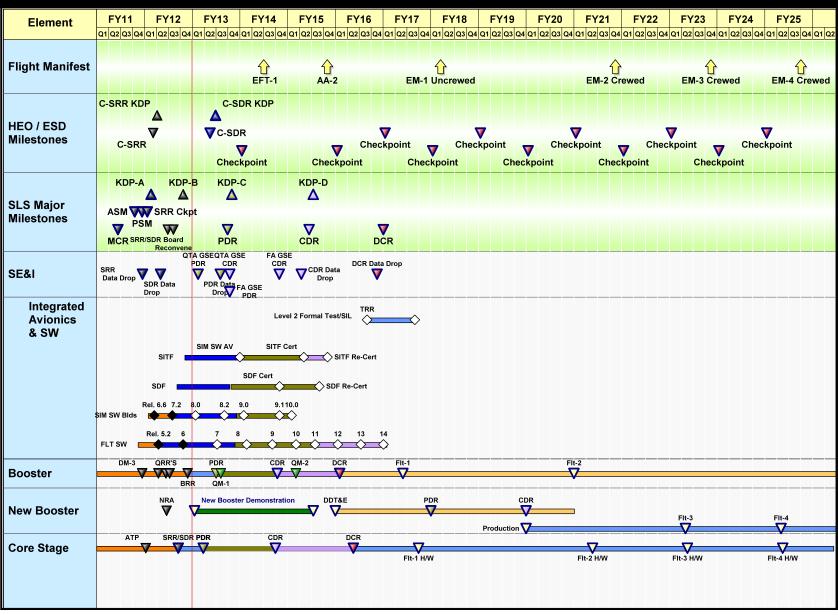






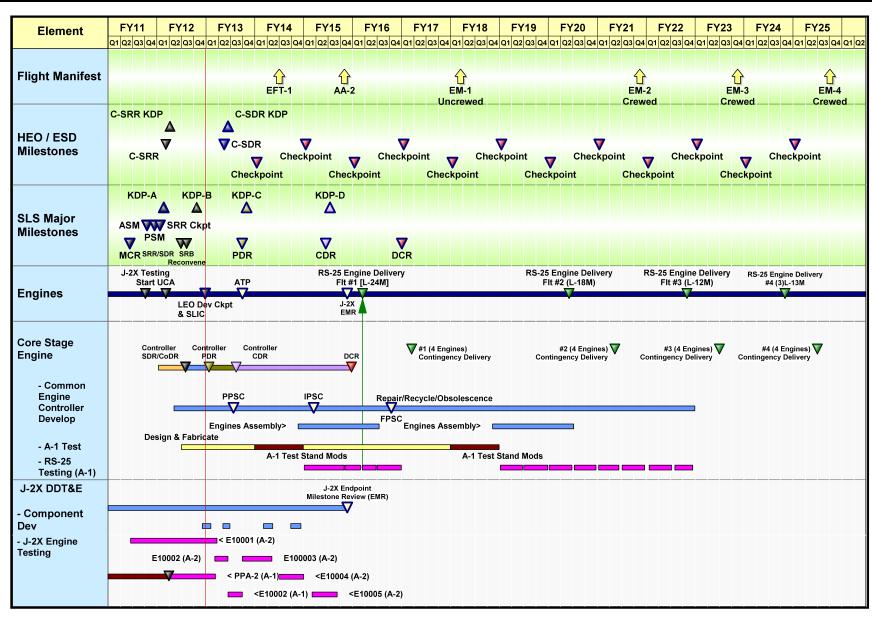
SLS Top Level Milestone Schedule (1/3)





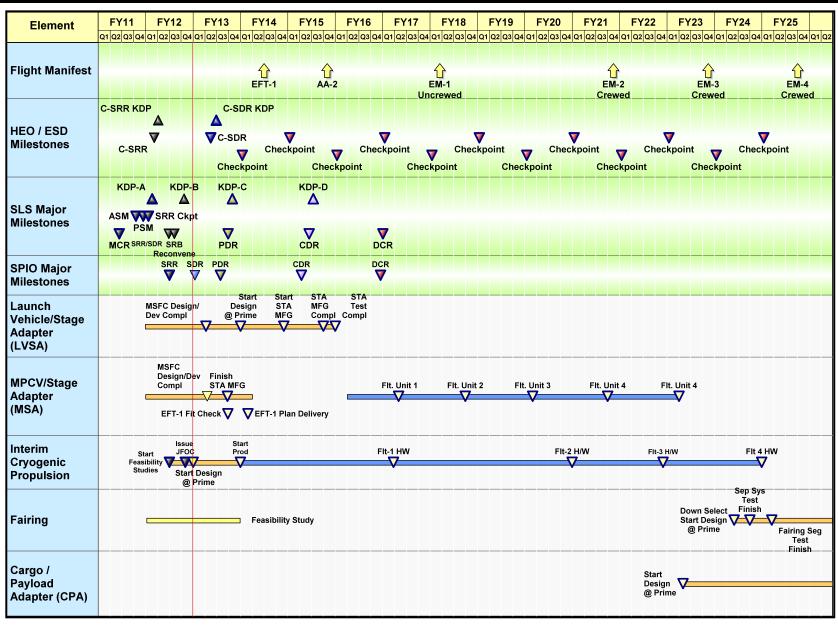
SLS Top Level Milestone Schedule (2/3)





SLS Top Level Milestone Schedule (3/3)

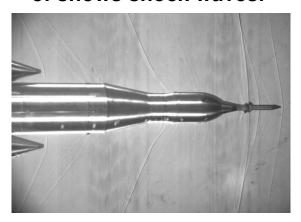


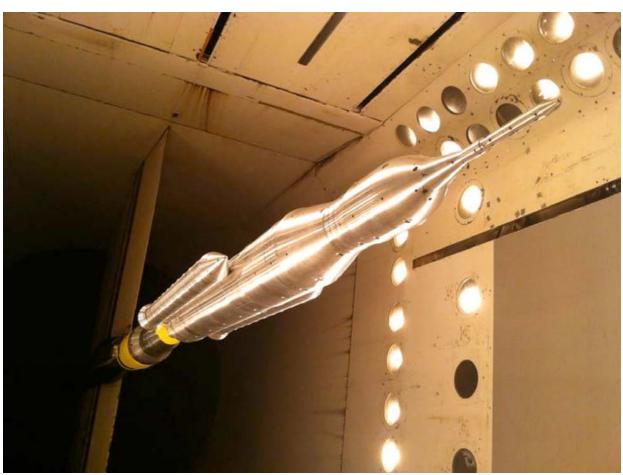


Rigid Buffet Wind Tunnel Testing



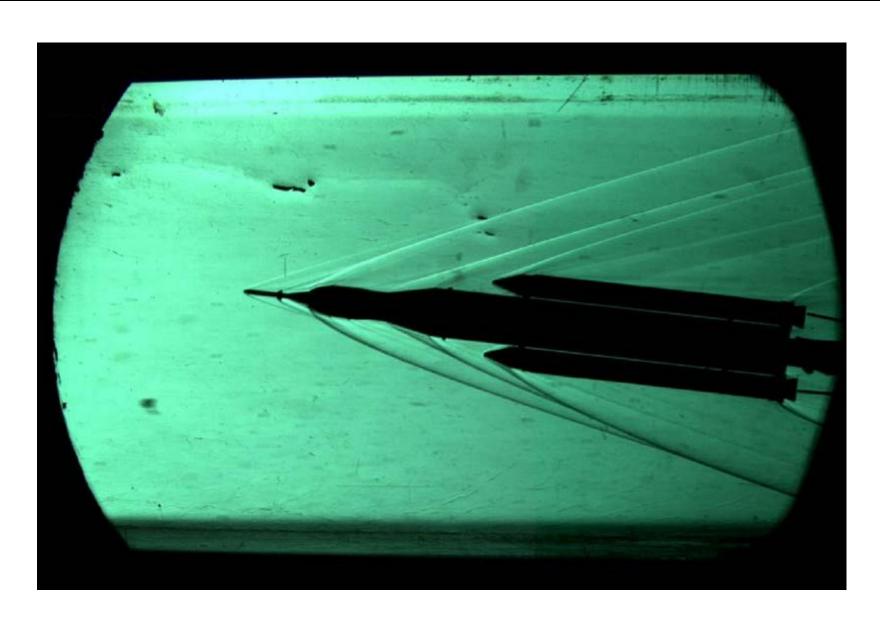
- The SLS Rigid Buffet Wind Tunnel model has been completed and installed in the Transonic Dynamics Tunnel (TDT) at NASA/Langley Research Center (LaRC).
- Preparations and pre-test check-outs were completed and testing has initiated.
- Right: photo shows the SLS Rigid Buffet Wind Tunnel Model installed in the TDT tunnel at LaRC. Bottom: Schlieren image of shows shock waves.





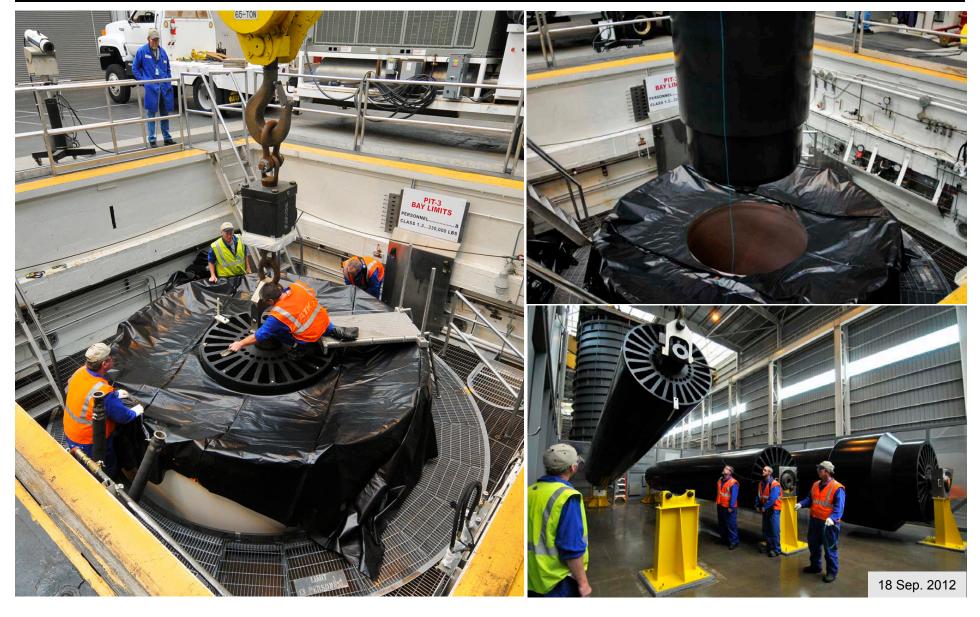
SLS Wind Tunnel Schlieren Technique





Booster Hardware Pictures Center/Center Core Pop





MSA Manufacturing Status



Pathfinder (MSFC)

- Barrel section vertical welds completed 9/20
- Barrel section removed from Vertical Weld Tool (VWT) by AS42 crew 9/21
- Phased Array Ultrasonic (PAUT) NDE completed 10/5 with no flaws identified





MSA Manufacturing Status



Pathfinder (MSFC)(cont'd)

- Forward ring and barrel section loaded into Robotic Weld Tool (RWT) 10/9
- Alignment and photogrammetry of components in work in preparation for trimming and welding operation
- Forward ring weld anticipated to occur on October 29





MSA Manufacturing Status



Barrel Panel Machining

- ◆ Machining complete on first panel 10/8
 - MSFC QA travelled to AMRO to buy off this week
 - Next steps are dye penetrant NDE and bump forming
- ◆ Machining complete on second panel 10/15







Ground Systems Development and Operations



Vehicle Integration & Launch (VIL)



VIL Systems Integration

- Completed initial assessment of ML - VAB Platform operations compatibility

Mobile Launcher

- ML Structural and Facility Support Systems 45% design review complete
- Vehicle Stabilizer SRR complete
- Hydrogen Access Arm Support Pressure (HAASP) Subsystem 30% and Sensory Data Acquisition Subsystem (SDAS) 45% reviews complete

Integrated Operations

Completed FTS closeout to launch timeline analysis that will be used for 91-710 tailoring

Launch Pad 39B

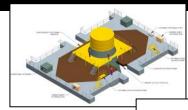
- Initiated several Designs: Flame Trench Refurbishment; LOX Vaporizer Installation; Extensible columns; ECS; Refurbish and Upgrade Water System (Phase II); Medium Class Launch Capability; IOP/SS Design modifications
- Construction Progress: Working final punch list for Water Tank Refurbishment;
 Continuing LOX/LH2 Sphere refurbishment; Elevator final inspections in progress; Initiated Catacomb roof repair

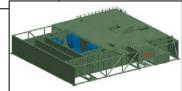
Crawler Transporter

- Several 20 year life extension projects 100% complete: JEL Valve replacement;
 Alco E1 & E2 Engine Panel Upgrade; Parking/Service Brakes
- Completed 60% Design Review for the Jacking, Equalizing, and Leveling (JEL)
 Actuators
- Roller Bearing fabrication, assembly and installation kick-off
- Conducted Test Operations Readiness Review for 20 year life extension V&V planned for November 5 – November 10, 2012 CT2 will be rolled to Pad A

VAB

- VAB HB3 Platform Removal is complete
- VAB Operations Center activated in Cell 8
- Consolidated VAB Access Control Facility Concept Validation Study complete









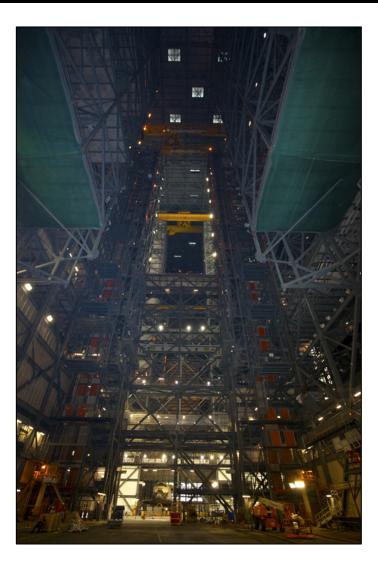


VIL Accomplishments





Platform Removal in Progress



Platform Removal Complete

Command, Control, Communications & Range



 Delivered basic command and control hardware and software capability for the Spaceport Command and Control System (SCCS)

Firing Room 2/3

 Flooring has been ordered, expected by December 7, 2012 and installed by January 31, 2013.

Comm Duct Boring has Begun

 Banana River Repeater Station (BRRS) working concrete encasement for the manhole installation. TA site plan submitted for review November 2, 2012.

50 MHz Doppler Radar Wind Profiler (DRWP) O&M Support

 Contract was officially awarded to Kegman Inc. on September 24, 2012. The contract provides complete DDT&E for the NASA 50 MHz Doppler Radar and Wind Profiler.



Updated LCC Comm Room 1P10 showing the new OIS-M AC-Raceway (pictured on the floor). This (raceway) will provide AC power to the Comm racks and allows flexibility to position racks in different locations without major power modifications.



Comm Duct boring North side of Banana River Drive site plans submitted.

Summary



Focused on 2014 and 2017 flight tests

- NASA is making excellent progress
 - Orion has delivered EFT-1 article and continues subsystem testing
 - SLS is proceeding with vehicle design, engine testing, and contract actions
 - Ground Systems is proceeding well with infrastructure refurbishment and multi-user preparations